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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,304	11/06/2001	Warren B. Nicholson	H201288/DE3-0057	3299
7590	11/03/2003		EXAMINER	
EDMUND P. ANDERSON DELPHI TECHNOLOGIES, INC. Legal Staff, Mail Code: 480-414-420 P.O. Box 5052 Troy, MI 48007-5052			ELLINGTON, ALANDRA	
			ART UNIT	PAPER NUMBER
			2855	
DATE MAILED: 11/03/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No:	Applicant(s)	
	10/008,304	NICHOLSON, WARREN B.	
	Examiner	Art Unit	
	Alandra N Ellington	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20³² is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) 8-17 and 32 is/are allowed.

6) Claim(s) 1-4 and 9¹¹ and 20 is/are rejected.

7) Claim(s) 5, 6, 18, 30 and 31²¹⁻²⁴ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 06 November 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. ____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

4) Interview Summary (PTO-413) Paper No(s). ____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 38, 58, 74, 76, 80 and 92. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "102" has been used to designate both "voltage signal" and "printed circuit board". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it contains more than 150 words and uses legal phraseology. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 21-29 are objected to because of the following informalities: Claim 21, a pass should be placed between "sensorsensing" on line 2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-4, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Moore et al (4,520,681).

With respect to Claim 1, Moore et al discloses a torque sensor for determining the torque acting upon a shaft, the torque sensor comprising a radiation source 20,24 emitting radiation of at least one wavelength; at least one sensor 22,26 sensing the emitted radiation generating thereby at least one intensity signal indicative of the intensity of the emitted radiation; at least one signal conditioner 12,14,16,18 receptive of the emitted radiation and positioned on a shaft 28 between the radiation source 20,24 and the at least one sensor 22,26 thereby conditioning the emitted radiation; and a circuit 60 receptive of the at least one intensity signal determining thereby the torque

acting upon the shaft 28 and compensating for the attenuation of the emitted radiation (col. 3 lines 6-57, col. 4 lines 19-43, col. 5 lines 10-49).

With respect to Claim 3, Moore et al discloses the torque sensor as set forth in Claim 1 wherein the at least one signal conditioner 12,14,16,18 comprises a plurality of polarizers 16,18 having polarization axes oriented at a prescribed angles with respect to one another (col. 3 lines 1-26).

With respect to Claim 4, Moore et al discloses the torque sensor as set forth in Claim 3, wherein the plurality of polarizers 16,18 are substantially opaque to radiation at first wavelength 74 and substantially transparent to radiation at the second wavelength 76 (col. 5 lines 10-64).

With respect to Claim 19, Moore et al discloses the torque sensor as set forth in Claim 1 wherein the circuit 60 is receptive of the at least one intensity signal thereby determining the torque acting upon the shaft 28 (col. 5 lines 10-68, col. 6 lines 1-59).

With respect to Claim 20, Moore et al discloses the torque sensor as set forth in Claim 1 wherein the circuit 60 is receptive of the at least one intensity signal thereby controlling the wavelength of the emitted radiation (col. 5 lines 10-68, col. 6 lines 1-59).

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Gutjahr et al (6,513,394 B1).

With respect to Claim 1, Gutjahr et al discloses a torque sensor 1 for determining the torque acting upon a shaft 2,3, the torque sensor 1 comprising a radiation source 15

emitting radiation of at least one wavelength; at least one sensor 9 sensing the emitted radiation generating thereby at least one intensity signal indicative of the intensity of the emitted radiation; at least one signal conditioner 10,12 receptive of the emitted radiation and positioned on a shaft 2,3 between the radiation source 15 and the at least one sensor 9 thereby conditioning the emitted radiation; and a circuit receptive 18 of the at least one intensity signal determining thereby the torque acting upon the shaft 2,3 and compensating for the attenuation of the emitted radiation (col. 4 lines 47-57 {Fig. 1}).

With respect to Claim 2, Gutjahr et al discloses the torque sensor as set forth in Claim 1 wherein the radiation source 15 comprises a plurality of parallel light emitting diodes having alternate anodes connected either to electrical ground or energized by a prescribed voltage and alternate cathodes connected either to electrical ground or energized by the prescribed voltage (col. 5 lines 8-19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (4,520,681) or Gutjahr et al (6,513,394 B1) in view of Pratt, Jr. et al (3,897,766)

With respect to Claim 7, Moore et al or Gutjahr et al discloses the claimed invention except for at least one sensor comprising a photodiode. Pratt, Jr. et al teaches a torque sensor with at least one sensor D₁, D₂ comprising a photodiode (col. 6

lines 60-64). It would have been obvious at the time the invention was made to one having ordinary skill in the art to modify Moore et al or Gutjahr et al with the teaching of Pratt, Jr. et al to include at least one sensor comprising a photodiode for the purpose of providing an electric signal which varies as a function of the amplitude level of light transmitted (see Pratt, Jr et al, col. 6 lines 65-68).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (4,520,681) or Gutjahr et al (6,513,394 B1) in view of Dalton et al (US 2003/0010137 A1).

With respect to Claim 7, Moore et al or Gutjahr et al discloses the claimed invention except for at least one sensor comprising a photodiode. Dalton et al teaches a torque sensor with at least one sensor 160 comprising a photodiode (col. 4 [0027-0028]). It would have been obvious at the time the invention was made to one having ordinary skill in the art to modify Moore et al or Gutjahr et al with the teaching of Dalton et al to include at least one sensor comprising a photodiode for the purpose of generating a signal which indicates the location of the centroid of illumination along the detection axes (see Dalton et al, col. 4 [0027,0030]).

Allowable Subject Matter

8. Claims 5, 6, 18, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 8-17 and 32 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pratt, Jr. et al (3,871,215) discloses an opto-electronic apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alandra N. Ellington whose telephone number is (703)305-4449. The examiner can normally be reached on Monday - Friday, 6:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (703)305-4816. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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